

REVISIONS

| LTR | DESCRIPTION   | DATE (YR-MO-DA) | APPROVED    |
|-----|---|-----------------|-------------|
| A   | Added device types 05 through 10. Added case outlines X, Z, and T.<br>Redrew entire document. | 96-08-23        | K.Cottongim |
| B   | Added device types 11 through 13. Added case outline U.                                       | 96-10-22        | K.Cottongim |

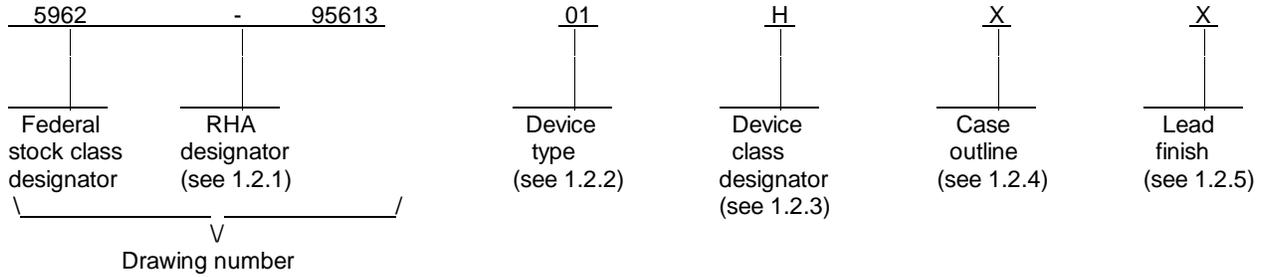
|                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |
|----------------------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| REV                  |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |
| SHEET                |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |
| REV                  | B     | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  |    |    |    |   |   |   |
| SHEET                | 15    | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |    |    |    |   |   |   |
| REV STATUS OF SHEETS | REV   |    |    | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B | B | B |
|                      | SHEET |    |    | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 |   |   |   |

|  |                                     |                           |  |   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|-------------------------------------|---------------------------|--|---|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| PMIC N/A   | PREPARED BY<br>Steve L. Duncan      |                           |  | <b>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>STANDARD<br/>MICROCIRCUIT<br/>DRAWING</b><br><br>THIS DRAWING IS AVAILABLE<br>FOR USE BY ALL<br>DEPARTMENTS<br>AND AGENCIES OF THE<br>DEPARTMENT OF DEFENSE<br><br>AMSC N/A | CHECKED BY<br>Michael C. Jones      |                           |  |   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | APPROVED BY<br>Kendall A. Cottongim |                           |  |   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | DRAWING APPROVAL DATE<br>95-11-07   |                           |  |   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | REVISION LEVEL<br><br>B             |                           |  |   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SIZE<br><b>A</b>   |                                     | CAGE CODE<br><b>67268</b> |  | <b>5962-95613</b>   |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHEET  |                                     | 1                         |  | OF  |  | 28 |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. SCOPE

1.1 Scope. This drawing forms a part of a one part - one part number documentation system (see 6.6 herein). This drawing describes device requirements for monolithic microcircuits to be processed in accordance with the class H requirements of MIL-PRF-38534. A choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN).

1.2 PIN. The PIN shall be as shown in the following example:



1.2.1 Radiation hardness assurance (RHA) designator. Device classes H and K RHA marked devices shall meet the MIL-PRF-38534 specified RHA levels and shall be marked with the appropriate RHA designator. A dash (-) indicates a non-RHA device.

1.2.2 Device type(s). The device type(s) shall identify the circuit function as follows:

| <u>Device type</u> | <u>Generic number</u>       | <u>Circuit function</u> | <u>Access time</u> |
|--------------------|-----------------------------|-------------------------|--------------------|
| 01                 | WMS512K8-120                | 512K x 8 bit SRAM       | 120 ns             |
| 02                 | WMS512K8-100                | 512K x 8 bit SRAM       | 100 ns             |
| 03                 | WMS512K8-85                 | 512K x 8 bit SRAM       | 85 ns              |
| 04                 | WMS512K8-70                 | 512K x 8 bit SRAM       | 70 ns              |
| 05                 | ACT-S512K8N-055,WMS512K8-55 | 512K x 8 bit SRAM       | 55 ns              |
| 06                 | ACT-S512K8N-045,WMS512K8-45 | 512K x 8 bit SRAM       | 45 ns              |
| 07                 | ACT-S512K8N-035,WMS512K8-35 | 512K x 8 bit SRAM       | 35 ns              |
| 08                 | ACT-S512K8N-025,WMS512K8-25 | 512K x 8 bit SRAM       | 25 ns              |
| 09                 | ACT-S512K8N-020,WMS512K8-20 | 512K x 8 bit SRAM       | 20 ns              |
| 10                 | ACT-S512K8N-017,WMS512K8-17 | 512K x 8 bit SRAM       | 17 ns              |
| 11                 | WMS512K8M-45                | 512K x 8 bit SRAM       | 45 ns              |
| 12                 | WMS512K8M-35                | 512K x 8 bit SRAM       | 35 ns              |
| 13                 | WMS512K8M-25                | 512K x 8 bit SRAM       | 25 ns              |

1.2.3 Device class designator. This device class designator shall be a single letter identifying the product assurance level as follows:

| <u>Device class</u> | <u>Device requirements documentation</u>         |
|---------------------|--|
| H                   | Certification and qualification to MIL-PRF-38534 |

1.2.4 Case outline(s). The case outline(s) shall be as designated in MIL-STD-1835 and as follows:

| <u>Outline letter</u> | <u>Descriptive designator</u> | <u>Terminals</u> | <u>Package style</u>              |
|-----------------------|-------------------------------|------------------|-----------------------------------|
| T                     | See figure 1                  | 32               | SOJ, ceramic, evolutionary pinout |
| X                     | See figure 1                  | 36               | Flatpack, ceramic                 |
| Y                     | See figure 1                  | 32               | DIP, ceramic, single cavity       |
| Z                     | See figure 1                  | 36               | SOJ, ceramic                      |
| U                     | See figure 1                  | 36               | Flatpack, ceramic                 |

1.2.5 Lead finish. The lead finish shall be as specified in MIL-PRF-38534 for classes H and K. Finish letter "X" shall not be marked on the microcircuit or its packaging. The "X" designation is for use in specifications when lead finishes A, B, and C are considered acceptable and interchangeable without preference.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>  |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>2</b> |

1.3 Absolute maximum ratings. 1/

|  |                             |
|--|-----------------------------|
| Supply voltage range ( $V_{CC}$ )        | -0.5 V dc to +7.0 V dc      |
| Signal voltage range ( $V_g$ )           | -0.5 V dc to $V_{CC} + 0.5$ |
| Power dissipation ( $P_D$ )              | 1.1 W max                   |
| Storage temperature range                | -65° C to +150° C           |
| Lead temperature (soldering, 10 seconds) | +300° C                     |
| Junction temperature ( $T_J$ )           | 150° C                      |

1.4 Recommended operating conditions.

|   |                                  |
|---|----------------------------------|
| Supply voltage range ( $V_{CC}$ )             | +4.5 V dc to +5.5 V dc           |
| Input low voltage range ( $V_{IL}$ )          | -0.3 V dc to +0.8 V dc           |
| Input high voltage range ( $V_{IH}$ )         | +2.2 V dc to $V_{CC} + 0.3$ V dc |
| Output low voltage, maximum ( $V_{OL}$ )      | +0.4 V dc                        |
| Output high voltage, minimum ( $V_{OH}$ )     | +2.4 V dc                        |
| Ambient operating temperature range ( $T_A$ ) | -55° C to +125° C                |

2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and handbook. Unless otherwise specified, the following specification, standards, and handbook of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATION

PERFORMANCE

MIL-PRF-38534 - Hybrid Microcircuits, General Specification for.

STANDARDS

MILITARY

- MIL-STD-883 - Test Methods and Procedures for Microelectronics.
- MIL-STD-973 - Configuration Management.
- MIL-STD-1835 - Microcircuit Case Outlines.

HANDBOOK

MILITARY

MIL-HDBK-780 - Standard Microcircuit Drawings.

(Copies of the specification, standards, and handbook required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

1/ Stresses above the absolute maximum rating may cause permanent damage to the device. Extended operation at the maximum levels may degrade performance and affect reliability.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
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|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>3</b> |

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-38534 and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38534 and herein.

3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.4 herein and figure 1.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Truth table(s). The truth table(s) shall be as specified on figure 3.

3.2.4 Timing diagram(s). The timing diagram(s) shall be as specified on figure 4 and 5.

3.2.5 Block diagram. The block diagram shall be as specified on figure 6.

3.2.6 Output load circuit. The output load circuit shall be as specified on figure 7.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full specified operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-PRF-38534. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in QML-38534.

3.7 Manufacturer eligibility. In addition to the general requirements of MIL-PRF-38534, the manufacturer of the part described herein shall maintain the electrical test data (variables format) from the initial quality conformance inspection group A lot sample, produced on the certified line, for each device type listed herein. The data should also include a summary of all parameters manually tested, and for those which, if any, are guaranteed. This data shall be maintained under document revision level control by the manufacturer and be made available to the preparing activity (DSCC-VA) upon request.

3.8 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to supply to this drawing. The certificate of compliance submitted to DSCC-VA shall affirm that the manufacturer's product meets the requirements of MIL-PRF-38534 and the requirements herein.

3.9 Certificate of conformance. A certificate of conformance as required in MIL-PRF-38534 shall be provided with each lot of microcircuits delivered to this drawing.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38534.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38534. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition B. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

(2)  $T_A$  as specified in accordance with table 1 of method 1015 of MIL-STD-883.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

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|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>4</b> |

TABLE I. Electrical performance characteristics.

| Test                        | Symbol          | Conditions 1/<br>-55° C ≤ T <sub>A</sub> ≤ +125° C<br>V <sub>SS</sub> = 0 Vdc<br>+4.5 Vdc ≤ V <sub>CC</sub> ≤ +5.5 Vdc<br>unless otherwise specified | Group A<br>subgroups | Device<br>types | Limits |     | Unit |
|-----------------------------|-----------------|--|----------------------|-----------------|--------|-----|------|
|                             |                 |  |                      |                 | Min    | Max |      |
| <b>DC parameters</b>        |                 |  |                      |                 |        |     |      |
| Operating supply<br>current | I <sub>CC</sub> | $\overline{CS} = V_{IL}, \overline{OE} = V_{IH}$<br>f = 5 MHz<br>V <sub>CC</sub> = 5.5 Vdc   | 1,2,3                | 01-04           |        | 50  | mA   |
|                             |                 |  |                      | 05-10           |        | 130 |      |
|                             |                 |  |                      | 11-13           |        | 200 |      |
| Standby current             | I <sub>SB</sub> | $\overline{CS} = V_{IH}, \overline{OE} = V_{IH}$<br>f = 5 MHz<br>V <sub>CC</sub> = 5.5 Vdc   | 1,2,3                | 01-04           |        | 1   | mA   |
|                             |                 |  |                      | 05-10           |        | 20  |      |
|                             |                 |  |                      | 11-13           |        | 30  |      |
| Input leakage current       | I <sub>LI</sub> | V <sub>CC</sub> = 5.5 V dc, V <sub>IN</sub> = GND<br>or V <sub>CC</sub>  | 1,2,3                | All             |        | 10  | μA   |
| Output leakage current      | I <sub>LO</sub> | $\overline{CS} = V_{IH}, \overline{OE} = V_{IH}$<br>V <sub>OUT</sub> = GND or V <sub>CC</sub>  | 1,2,3                | All             |        | 10  | μA   |
| Output low voltage          | V <sub>OL</sub> | V <sub>CC</sub> = +4.5 V dc, I <sub>OL</sub> = 2.1 mA  | 1,2,3                | 01-06           |        | 0.4 | V    |
|                             |                 | V <sub>CC</sub> = +4.5V dc, I <sub>OL</sub> = 8.0 mA   |                      | 07-13           |        | 0.4 |      |
| Output high voltage         | V <sub>OH</sub> | V <sub>CC</sub> = +4.5 V dc, I <sub>OH</sub> = -1.0 mA   | 1,2,3                | 01-06           | 2.4    |     | V    |
|                             |                 | V <sub>CC</sub> = +4.5V dc, I <sub>OH</sub> = -4.0 mA  |                      | 07-13           | 2.4    |     |      |

**Data Retention Characteristics**

|                                  |                    |                                   |       |       |     |      |    |
|----------------------------------|--------------------|-----------------------------------|-------|-------|-----|------|----|
| Data Retention Supply<br>voltage | V <sub>DR</sub>    | $\overline{CS} \geq V_{CC} - 0.2$ | 1,2,3 | All   | 2.0 | 5.5  | V  |
| Data Retention Current           | I <sub>CCDR1</sub> | V <sub>CC</sub> = 3V              | 1,2,3 | 01-04 |     | 0.4  | mA |
|                                  |                    |                                   |       | 05-10 |     | 3.0  |    |
|                                  |                    |                                   |       | 11-13 |     | 10.0 |    |

See footnotes at end of table.

|   |                   |                             |                    |
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|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>5</b> |

TABLE I. Electrical performance characteristics - Continued.

| Test  | Symbol           | Conditions 1/<br>-55°C ≤ T <sub>A</sub> ≤ +125°C<br>V <sub>SS</sub> = 0 Vdc<br>+4.5 Vdc ≤ V <sub>CC</sub> ≤ +5.5 Vdc<br>unless otherwise specified | Group A<br>subgroups | Device<br>types   | Limits   |     | Unit |
|---|------------------|--|----------------------|---|--|-----|------|
|   |                  |  |                      |   | Min  | Max |      |
| <b>Capacitance</b>                          |                  |  |                      |   |  |     |      |
| Input capacitance                           | C <sub>IN</sub>  | V <sub>IN</sub> = 0 V, f = 1.0 MHz,<br>T <sub>A</sub> = +25°C  | 4                    | All   |  | 20  | pF   |
| Output capacitance                          | C <sub>OUT</sub> | V <sub>OUT</sub> = 0 V, f = 1.0 MHz,<br>T <sub>A</sub> = +25°C   | 4                    | All   |  | 20  | pF   |
| <b>Functional testing</b>                   |                  |  |                      |   |  |     |      |
| Functional tests                            |                  | See 4.3.1c   | 7,8A,8B              | All   |  |     |      |
| <b>Read cycle AC timing characteristics</b> |                  |  |                      |   |  |     |      |
| Read cycle time                             | t <sub>RC</sub>  | See figure 4   | 9,10,11              | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08,13<br>09<br>10 | 120<br>100<br>85<br>70<br>55<br>45<br>35<br>25<br>20<br>17 |     | nS   |
| Address access time                         | t <sub>AA</sub>  | See figure 4   | 9,10,11              | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08,13<br>09<br>10 | 120<br>100<br>85<br>70<br>55<br>45<br>35<br>25<br>20<br>17 |     | nS   |
| Output hold from<br>address change          | t <sub>OH</sub>  | See figure 4   | 9,10,11              | 01-04<br>07-13<br><br>05,06                                       | 5<br><br>0   |     | nS   |
| Chip Select access<br>time                  | t <sub>ACS</sub> | See figure 4   | 9,10,11              | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08,13<br>09<br>10 | 120<br>100<br>85<br>70<br>55<br>45<br>35<br>25<br>20<br>17 |     | nS   |

See footnotes at end of table.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
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|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>6</b> |

TABLE I. Electrical performance characteristics - Continued.

| Test | Symbol | Conditions 1/<br>-55° C ≤ T <sub>A</sub> ≤ +125° C<br>V <sub>SS</sub> = 0 Vdc<br>+4.5 Vdc ≤ V <sub>CC</sub> ≤ +5.5 Vdc<br>unless otherwise specified | Group A<br>subgroups | Device<br>types | Limits |     | Unit |
|------|--------|--|----------------------|-----------------|--------|-----|------|
|      |        |  |                      |                 | Min    | Max |      |

Read cycle AC timing characteristics - continued.

|   |                  |              |         |  |              |   |    |
|---|------------------|--------------|---------|--|--------------|---|----|
| Output Enable to output valid                     | t <sub>OE</sub>  | See figure 4 | 9,10,11 | 01<br>02<br>03<br>04,11<br>05-07,12<br>08,13<br>09<br>10 |              | 60<br>50<br>40<br>35<br>25<br>12<br>10<br>9 | nS |
| Chip Select to output in low impedance 2/         | t <sub>CLZ</sub> | See figure 4 | 9,10,11 | 01-04<br>05-07,<br>11,12<br>08-10,13                     | 10<br>4<br>2 |   | nS |
| Output Enable to output in low impedance 2/       | t <sub>OLZ</sub> | See figure 4 | 9,10,11 | 01-04<br>05-13   | 5<br>0       |   | nS |
| Chip Select high to output in high impedance 2/   | t <sub>CHZ</sub> | See figure 4 | 9,10,11 | 01,02<br>03,04<br>05,06<br>07,11,12<br>08,13<br>09<br>10 |              | 35<br>25<br>20<br>15<br>12<br>10<br>9       | nS |
| Output Enable high to output in high impedance 2/ | t <sub>OHZ</sub> | See figure 4 | 9,10,11 | 01,02<br>03,04<br>05,06<br>07,11,12<br>08,13<br>09<br>10 |              | 35<br>25<br>20<br>15<br>12<br>10<br>9       | nS |

Write cycle AC timing

|                  |                 |              |         |   |  |  |    |
|------------------|-----------------|--------------|---------|---|--|--|----|
| Write cycle time | t <sub>WC</sub> | See figure 5 | 9,10,11 | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08,13<br>09<br>10 | 120<br>100<br>85<br>70<br>55<br>45<br>35<br>25<br>20<br>17 |  | nS |
|------------------|-----------------|--------------|---------|---|--|--|----|

See footnotes at end of table.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>  |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>7</b> |

TABLE I. Electrical performance characteristics - Continued.

| Test   | Symbol           | Conditions 1/<br>-55° C ≤ T <sub>A</sub> ≤ +125° C<br>V <sub>SS</sub> = 0 Vdc<br>+4.5 Vdc ≤ V <sub>CC</sub> ≤ +5.5 Vdc<br>unless otherwise specified | Group A<br>subgroups | Device<br>types   | Limits  |                                 | Unit |
|--|------------------|--|----------------------|---|---|---------------------------------|------|
|  |                  |  |                      |   | Min   | Max                             |      |
| <u>Write cycle AC timing - continued.</u>      |                  |  |                      |   |   |                                 |      |
| Chip Select to<br>end of write                 | t <sub>CW</sub>  | See figure 5   | 9,10,11              | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08<br>09,10<br>13 | 100<br>80<br>75<br>60<br>50<br>35<br>25<br>20<br>15<br>17 |                                 | nS   |
| Address valid to<br>end of write               | t <sub>AW</sub>  | See figure 5   | 9,10,11              | 01<br>02<br>03<br>04<br>05<br>06,11<br>07,12<br>08<br>09,10<br>13 | 100<br>80<br>75<br>60<br>50<br>35<br>25<br>20<br>15<br>17 |                                 | nS   |
| Data Valid to end of<br>write                  | t <sub>DW</sub>  | See figure 5   | 9,10,11              | 01,02<br>03,04,11<br>05,06<br>07,12<br>08,13<br>09,10             | 40<br>30<br>25<br>20<br>15<br>12                          |                                 | nS   |
| Address setup time                             | t <sub>AS</sub>  | See figure 5   | 9,10,11              | All   | 0   |                                 | nS   |
| Write pulse width                              | t <sub>WP</sub>  | See figure 5   | 9,10,11              | 01,02<br>03,04<br>05<br>06,11<br>07,12<br>08<br>09,10<br>13       | 60<br>50<br>40<br>35<br>25<br>15<br>14<br>17              |                                 | nS   |
| Write enable to output<br>in high impedance 2/ | t <sub>WHZ</sub> | See figure 5   | 9,10,11              | 01,02<br>03-05<br>06,07<br>11,12<br>08,13<br>09,10                |   | 35<br>25<br>15<br>15<br>10<br>9 | nS   |
| Address hold time                              | t <sub>AH</sub>  | See figure 5   | 9,10,11              | 01-06<br>07-13  | 5<br>0  |                                 | nS   |
| Output active from 2/<br>end of write          | t <sub>OW</sub>  | See figure 5   | 9,10,11              | 01-06<br>07-13  | 5<br>0  |                                 | nS   |

See footnotes at end of table.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>  |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>8</b> |

TABLE I. Electrical performance characteristics - Continued.

| Test | Symbol | Conditions 1/<br>-55° C ≤ T <sub>A</sub> ≤ +125° C<br>V <sub>SS</sub> = 0 Vdc<br>+4.5 Vdc ≤ V <sub>CC</sub> ≤ +5.5 Vdc<br>unless otherwise specified | Group A<br>subgroups | Device<br>types | Limits |     | Unit |
|------|--------|--|----------------------|-----------------|--------|-----|------|
|      |        |  |                      |                 | Min    | Max |      |

Write cycle AC timing - continued.

|                |                 |              |         |     |   |  |    |
|----------------|-----------------|--------------|---------|-----|---|--|----|
| Data hold time | t <sub>DH</sub> | See figure 5 | 9,10,11 | All | 0 |  | nS |
|----------------|-----------------|--------------|---------|-----|---|--|----|

1/ Unless otherwise specified, the AC test conditions are as follows:

Input pulse levels: V<sub>IL</sub> = 0 V and V<sub>IH</sub> = 3.0 V.

Input rise and fall times: 5 nanoseconds.

Input and output timing reference levels: 1.5 V, ± 0.5 V.

Output loading: See figure 7.

Unless otherwise specified the DC test conditions are as follows:

V<sub>IL</sub> = 0.3 V, V<sub>IH</sub> = V<sub>CC</sub> - 0.3 V.

2/ Parameters shall be tested as part of device characterization and after design and process changes. Parameters shall be to the limits specified in table I for all lots not specifically tested.

|   |                   |                             |                    |
|---|-------------------|-----------------------------|--------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>  |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>9</b> |

Case outline Y

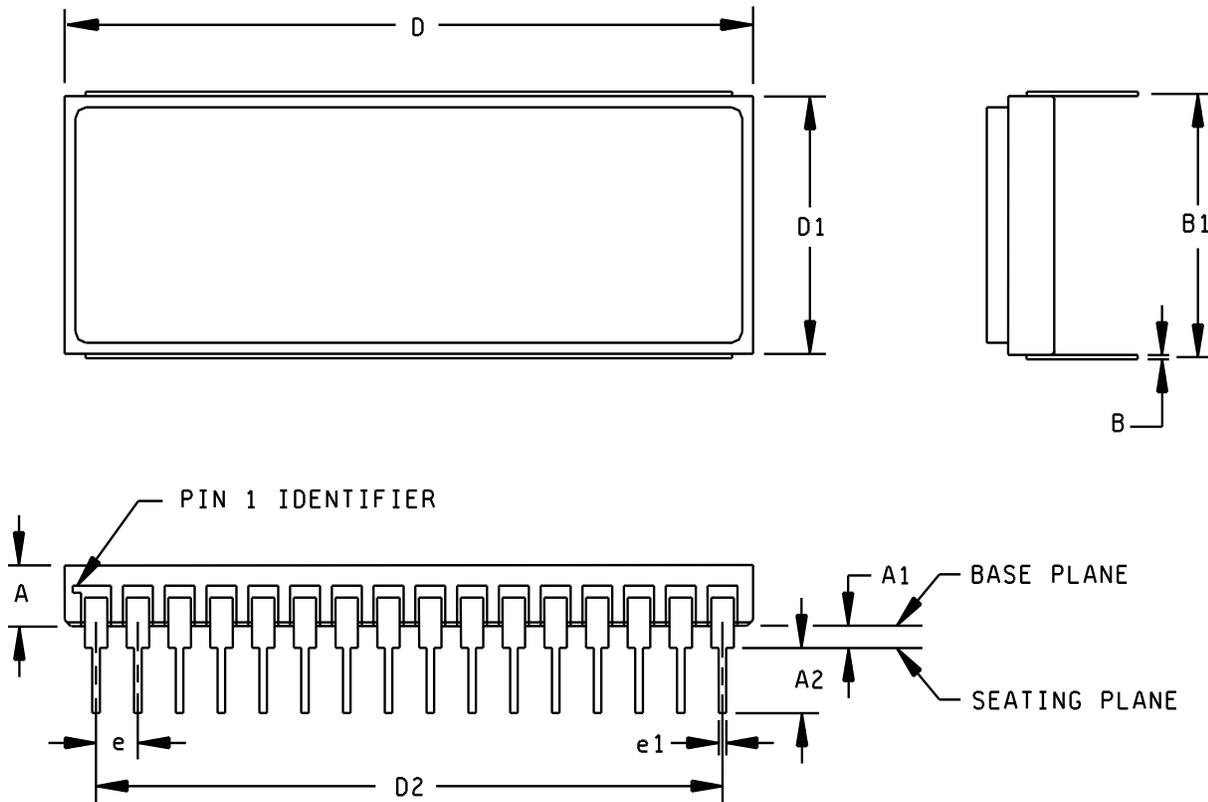


FIGURE 1. Case outline(s).

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>10</b> |

Case outline Y - Continued

| Symbol | Millimeters |       | Inches |       |
|--------|-------------|-------|--------|-------|
|        | Min         | Max   | Min    | Max   |
| A      | 3.48        | 5.13  | 0.137  | 0.202 |
| A1     | 0.48        | 1.52  | 0.019  | 0.060 |
| A2     | 3.18        |       | 0.125  |       |
| B      | 0.23        | 0.30  | 0.009  | 0.012 |
| B1     | 14.99       | 15.49 | 0.590  | 0.610 |
| D      | 40.56       | 42.82 | 1.597  | 1.686 |
| D1     | 14.73       | 15.34 | 0.580  | 0.604 |
| D2     | 37.90       | 38.30 | 1.492  | 1.508 |
| e      | 2.41        | 2.67  | 0.095  | 0.105 |
| e1     | 0.41        | 0.51  | 0.016  | 0.020 |

Notes:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.
2. For solder lead finish, dimensions B and e1 will increase by +0.003" (+.008 mm).

Figure 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>11</b> |

Case outline X

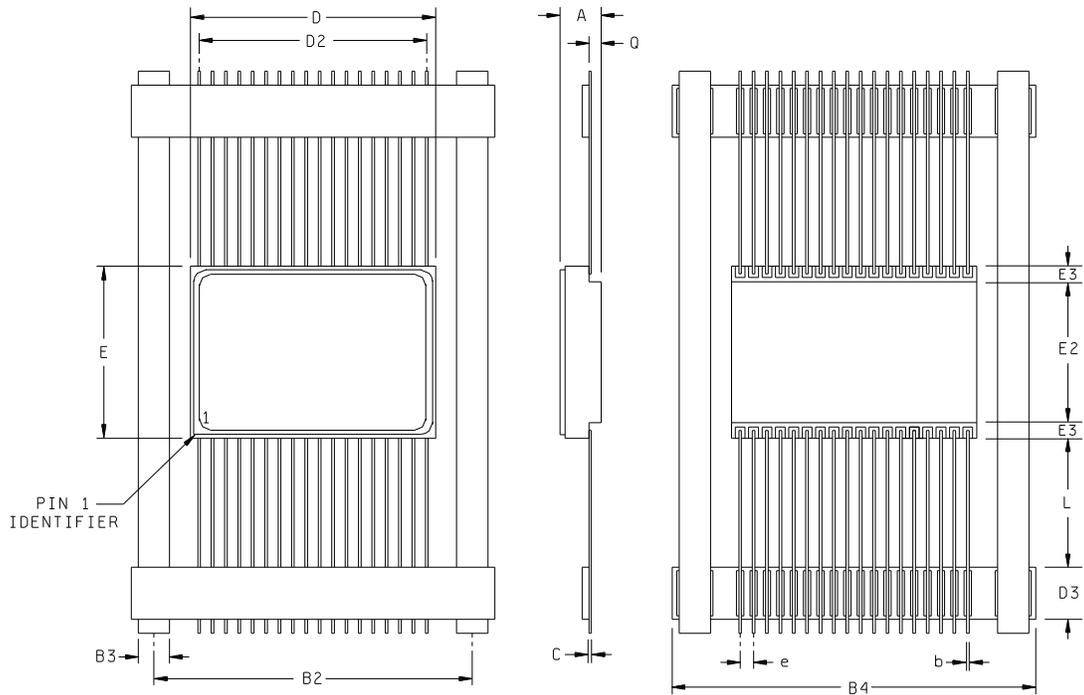


FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>12</b> |

Case outline X - Continued

| Symbol | Millimeters |       | Inches    |       |
|--------|-------------|-------|-----------|-------|
|        | Min         | Max   | Min       | Max   |
| A      | 2.31        | 3.18  | 0.091     | 0.125 |
| b      | 0.38        | 0.48  | 0.015     | 0.019 |
| B2     | 32.64 TYP   |       | 1.285 TYP |       |
| B3     | 3.81 TYP    |       | 0.150 TYP |       |
| B4     | 37.72       | 38.48 | 1.485     | 1.515 |
| C      | 0.08        | 0.18  | 0.003     | 0.007 |
| D      | 23.11       | 23.62 | 0.910     | 0.930 |
| D2     | 21.46       | 21.72 | 0.845     | 0.855 |
| D3     | 4.83        | 5.33  | 0.190     | 0.210 |
| E      | 12.83       | 13.08 | 0.505     | 0.515 |
| E2     | 9.78        | 10.03 | 0.385     | 0.395 |
| E3     | 1.40        | 1.65  | 0.055     | 0.065 |
| e      | 1.27 TYP    |       | 0.050 TYP |       |
| L      | 12.19       | 13.21 | 0.480     | 0.520 |
| Q      | 0.38        | 0.64  | 0.015     | 0.025 |

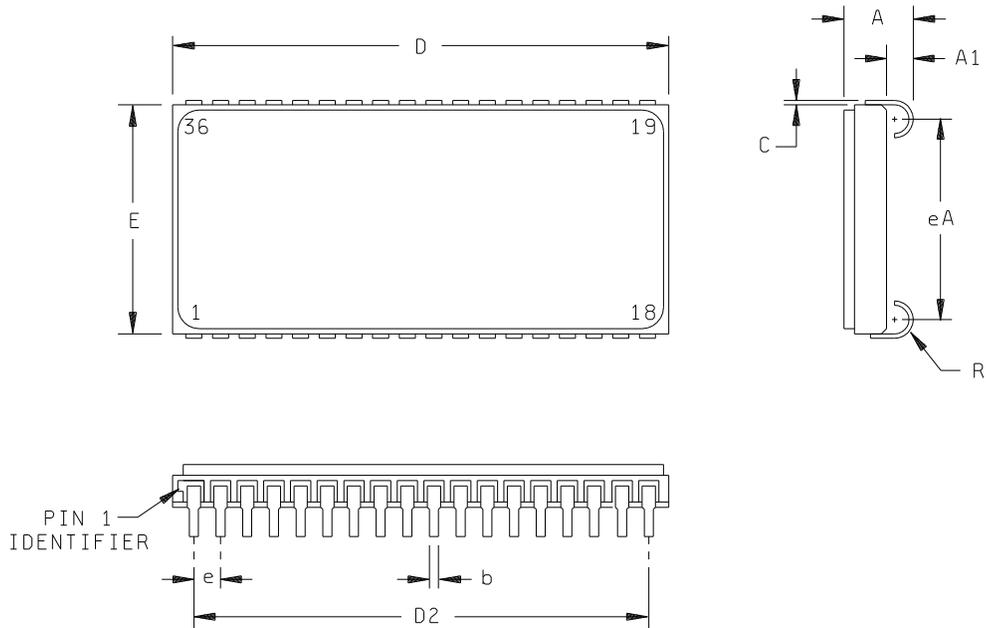
Note:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.

FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>13</b> |

Case outline Z



Notes:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.
2. Pin numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>14</b> |

Case outline Z - Continued

| Symbol | Millimeters |       | Inches    |       |
|--------|-------------|-------|-----------|-------|
|        | Min         | Max   | Min       | Max   |
| A      | 3.54        | 4.67  | 0.136     | 0.184 |
| A1     | 1.02        | 1.52  | 0.040     | 0.060 |
| b      | 0.38        | 0.48  | 0.015     | 0.019 |
| C      | 0.15        | 0.25  | 0.006     | 0.010 |
| D      | 23.11       | 23.62 | 0.910     | 0.930 |
| D2     | 21.46       | 21.72 | 0.845     | 0.855 |
| E      | 10.80       | 11.05 | 0.425     | 0.435 |
| e      | 1.27 TYP    |       | 0.050 TYP |       |
| eA     | 9.30        | 9.80  | 0.366     | 0.386 |
| R      | 0.89 TYP    |       | 0.035 TYP |       |

Note:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.

FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>15</b> |

Case outline T

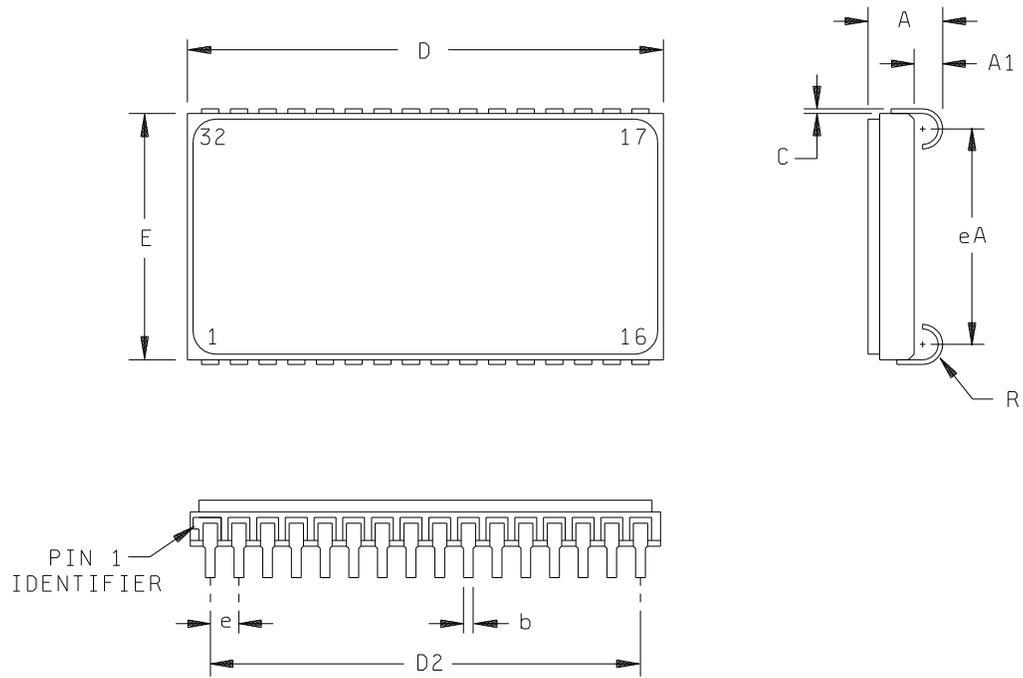


FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>16</b> |

Case outline T - Continued

| Symbol | Millimeters |       | Inches    |       |
|--------|-------------|-------|-----------|-------|
|        | Min         | Max   | Min       | Max   |
| A      | 2.69        | 3.96  | 0.106     | 0.156 |
| A1     | 1.02        | 1.52  | 0.040     | 0.060 |
| b      | 0.38        | 0.48  | 0.015     | 0.019 |
| C      | 0.15        | 0.25  | 0.006     | 0.010 |
| D      | 20.83       | 21.34 | 0.820     | 0.840 |
| D2     | 18.92       | 19.18 | 0.745     | 0.755 |
| E      | 10.80       | 11.05 | 0.425     | 0.435 |
| e      | 1.27 TYP    |       | 0.050 TYP |       |
| eA     | 9.30        | 9.80  | 0.366     | 0.386 |
| R      | 0.89 TYP    |       | 0.035 TYP |       |

Note:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.
2. Pin numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>17</b> |

Case outline U

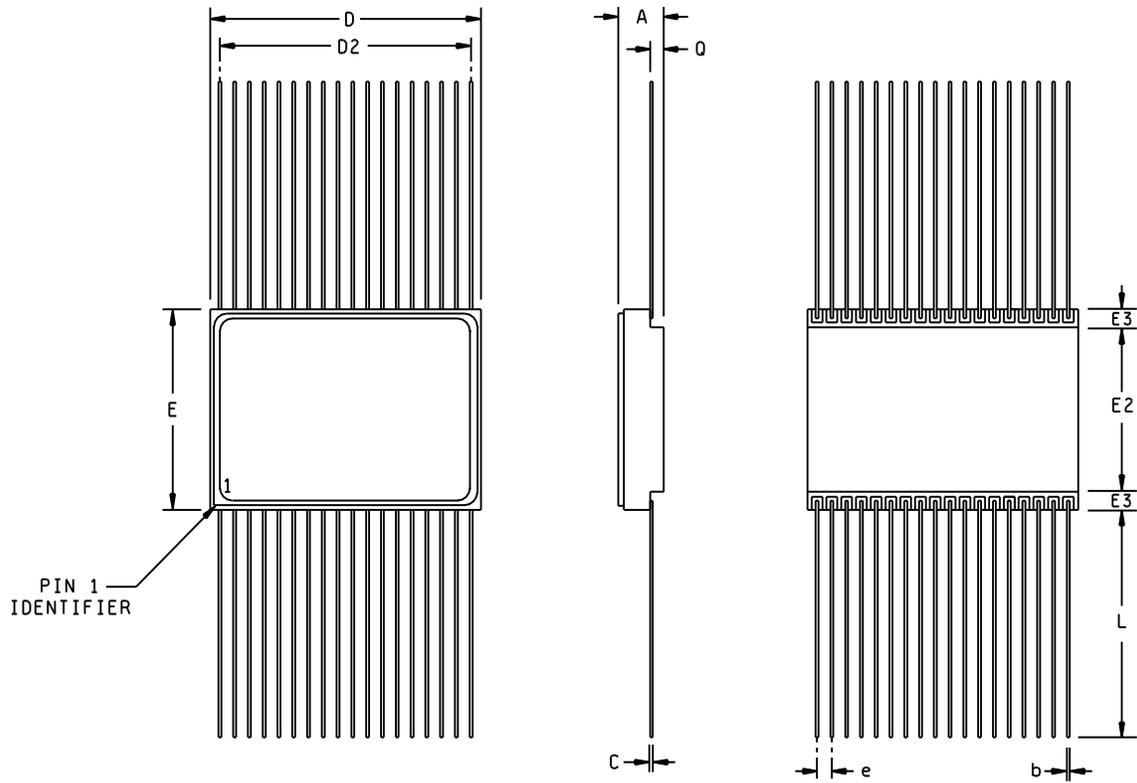


FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>18</b> |

Case outline U - Continued

| Symbol | Millimeters |       | Inches    |       |
|--------|-------------|-------|-----------|-------|
|        | Min         | Max   | Min       | Max   |
| A      | 2.26        | 3.18  | 0.089     | 0.125 |
| b      | 0.38        | 0.48  | 0.015     | 0.019 |
| C      | 0.08        | 0.18  | 0.003     | 0.007 |
| D      | 23.11       | 23.62 | 0.910     | 0.930 |
| D2     | 21.46       | 21.72 | 0.845     | 0.855 |
| E      | 12.83       | 13.08 | 0.505     | 0.515 |
| E2     | 9.78        | 10.03 | 0.385     | 0.395 |
| E3     | 1.40        | 1.65  | 0.055     | 0.065 |
| e      | 1.27 TYP    |       | 0.050 TYP |       |
| L      | 7.62        | 8.89  | 0.300     | 0.350 |
| Q      | 0.38        | 0.96  | 0.015     | 0.038 |

Note:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.

FIGURE 1. Case outline(s) - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>19</b> |

| Device types    | All             | Device types    | All             |
|-----------------|-----------------|-----------------|-----------------|
| Case outlines   | Y,T             | Case outlines   | Y,T             |
| Terminal number | Terminal symbol | Terminal number | Terminal symbol |
| 1               | A18             | 17              | I/O3            |
| 2               | A16             | 18              | I/O4            |
| 3               | A14             | 19              | I/O5            |
| 4               | A12             | 20              | I/O6            |
| 5               | A7              | 21              | I/O7            |
| 6               | A6              | 22              | $\overline{CS}$ |
| 7               | A5              | 23              | A10             |
| 8               | A4              | 24              | $\overline{OE}$ |
| 9               | A3              | 25              | A11             |
| 10              | A2              | 26              | A9              |
| 11              | A1              | 27              | A8              |
| 12              | A0              | 28              | A13             |
| 13              | I/O0            | 29              | $\overline{WE}$ |
| 14              | I/O1            | 30              | A17             |
| 15              | I/O2            | 31              | A15             |
| 16              | $V_{SS}$        | 32              | $V_{CC}$        |

FIGURE 2. Terminal connections.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>20</b> |

| Device types    | All             | Device types    | All             |
|-----------------|-----------------|-----------------|-----------------|
| Case outlines   | X,Z,U           | Case outlines   | X,Z,U           |
| Terminal number | Terminal symbol | Terminal number | Terminal symbol |
| 1               | A0              | 19              | NC              |
| 2               | A1              | 20              | A10             |
| 3               | A2              | 21              | A11             |
| 4               | A3              | 22              | A12             |
| 5               | A4              | 23              | A13             |
| 6               | $\overline{CS}$ | 24              | A14             |
| 7               | I/O0            | 25              | I/O4            |
| 8               | I/O1            | 26              | I/O5            |
| 9               | V <sub>CC</sub> | 27              | V <sub>CC</sub> |
| 10              | V <sub>SS</sub> | 28              | V <sub>SS</sub> |
| 11              | I/O2            | 29              | I/O6            |
| 12              | I/O3            | 30              | I/O7            |
| 13              | $\overline{WE}$ | 31              | $\overline{OE}$ |
| 14              | A5              | 32              | A15             |
| 15              | A6              | 33              | A16             |
| 16              | A7              | 34              | A17             |
| 17              | A8              | 35              | A18             |
| 18              | A9              | 36              | NC              |

FIGURE 2. Terminal connections - Continued.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>21</b> |

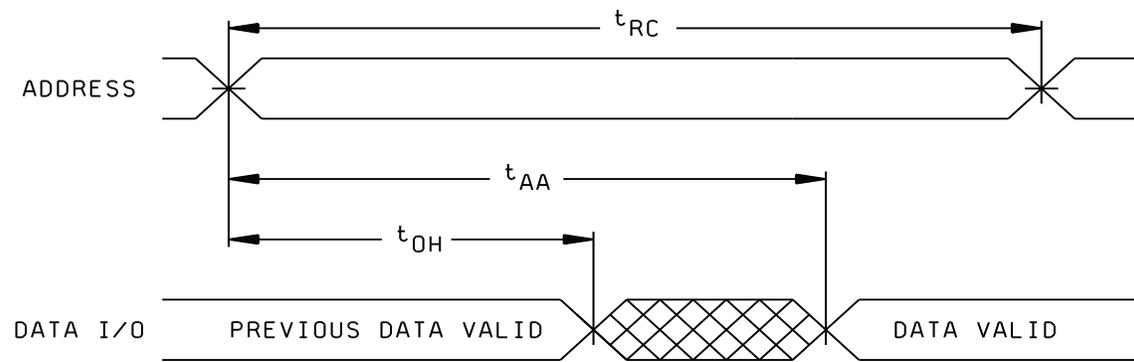
| $\overline{CS}$ | $\overline{OE}$ | $\overline{WE}$ | Mode              | Data I/O | Power   |
|-----------------|-----------------|-----------------|-------------------|----------|---------|
| H               | X               | X               | Standby           | High Z   | Standby |
| L               | L               | H               | Read              | Data out | Active  |
| L               | H               | H               | Output<br>disable | High Z   | Active  |
| L               | X               | L               | Write             | Data in  | Active  |

NOTES:

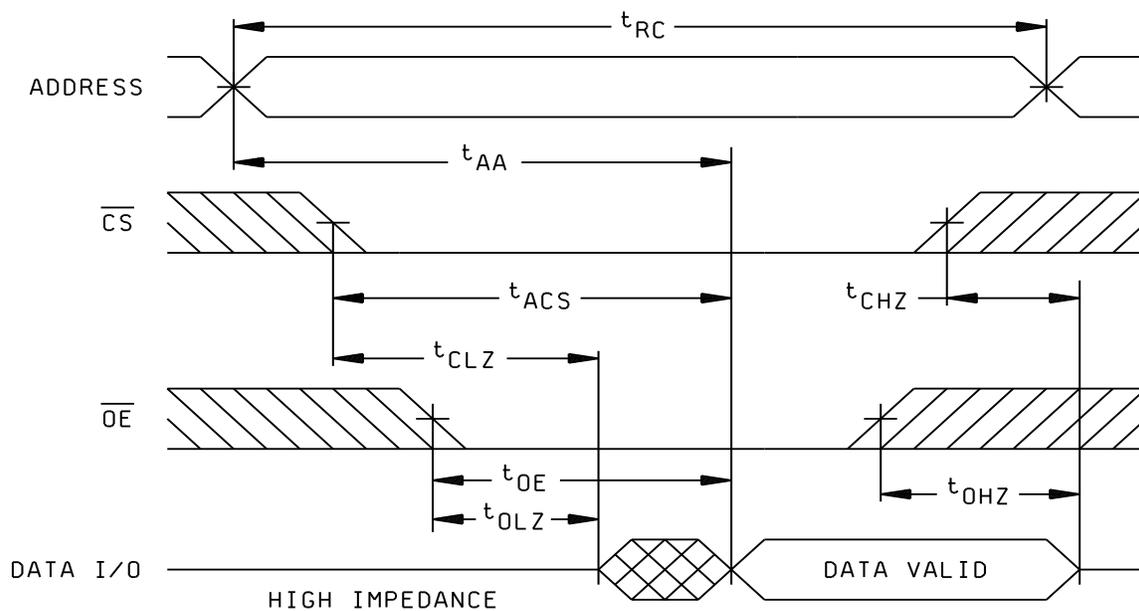
1. H =  $V_{IH}$  = High Logic Level.
2. L =  $V_{IL}$  = Low Logic Level.
3. X = Do not care (either high or low).
4. High Z = High Impedance state.

FIGURE 3. Truth Table.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>22</b> |



READ CYCLE 1 ( $\overline{CS} = V_{IL}, \overline{OE} = V_{IL}, \overline{WE} = V_{IH}$ )



READ CYCLE 2 ( $\overline{WE} = V_{IH}$ )

FIGURE 4. Read cycle timing diagram.

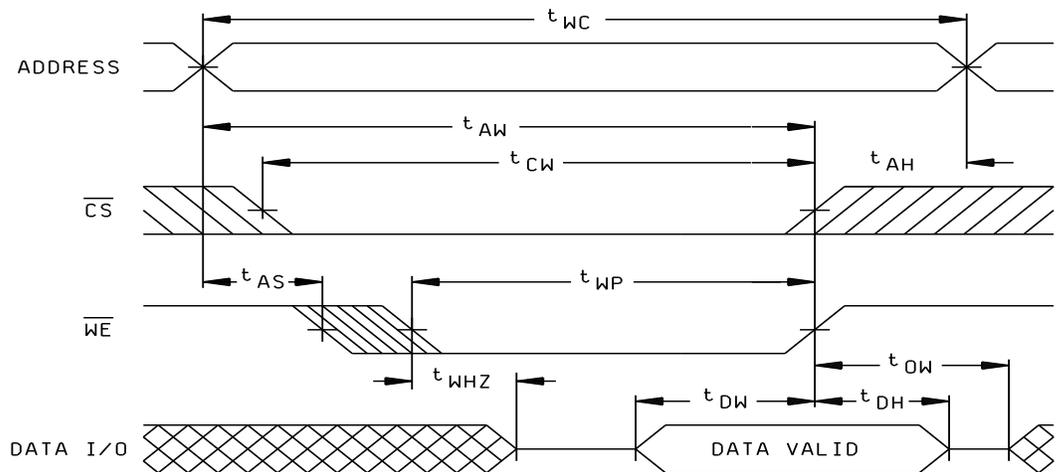
STANDARD  
MICROCIRCUIT DRAWING  
DEFENSE SUPPLY CENTER COLUMBUS  
COLUMBUS, OHIO 43216-5000

SIZE  
A

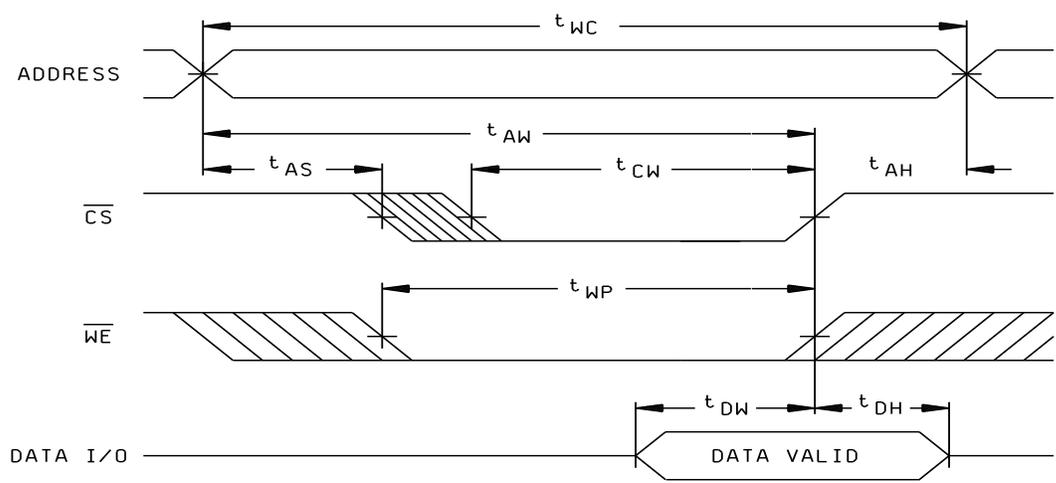
5962-95613

REVISION LEVEL  
B

SHEET  
23



WRITE CYCLE 1  $\overline{WE}$  CONTROLLED



WRITE CYCLE 2  $\overline{CS}$  CONTROLLED

FIGURE 5. Write cycle timing diagram.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>24</b> |

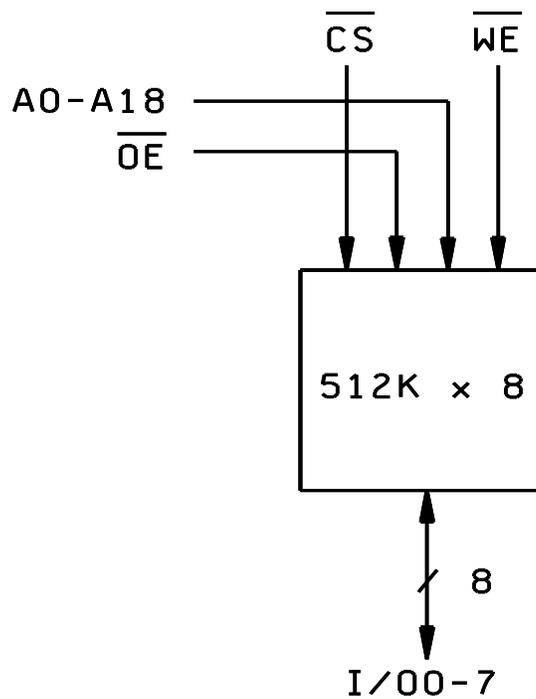
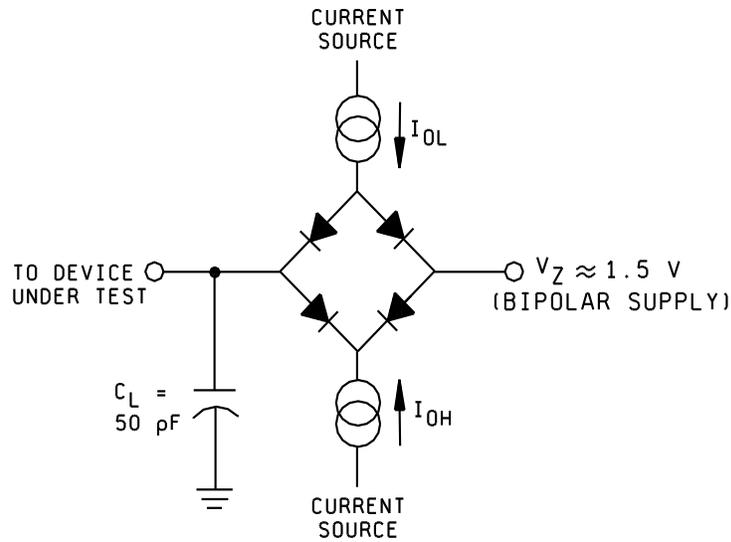


FIGURE 6. Block diagram.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>25</b> |



| Parameter                        | Typ.    | Unit |
|----------------------------------|---------|------|
| Input Pulse Level                | 0 - 3.0 | V    |
| Input Rise and Fall              | 5       | nS   |
| Input and Output Reference Level | 1.5     | V    |
| Output Load Capacitance          | 50      | pf   |

NOTES:

1.  $V_Z$  is programmable from -2V to +7V.
2.  $I_{OL}$  and  $I_{OH}$  are programmable from 0 to 16mA.
3. Tester impedance is  $Z_O = 75$  Ohms.
4.  $V_Z$  is typically the midpoint of  $V_{OH}$  and  $V_{OL}$ .
5.  $I_{OL}$  and  $I_{OH}$  are adjusted to simulate a typical resistive load circuit.
6. ATE tester includes jig capacitance.

FIGURE 7. Output load circuit.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>26</b> |

TABLE II. Electrical test requirements.

|  |  |
|--|--|
| MIL-PRF-38534 test requirements                                      | Subgroups<br>(in accordance with MIL-PRF-38534, group A test table)  |
| Interim electrical parameters  | 1,4,7,9  |
| Final electrical test parameters                                     | 1*,2,3,4,7,8A,8B,9,10,11   |
| Group A test requirements  | 1,2,3,4,7,8A,8B,9,10,11  |
| Group C end-point electrical parameters                              | 1,2,3,4,7,8A,8B,9,10,11  |
| MIL-STD-883, group E end-point electrical parameters for RHA devices | Subgroups **<br>(in accordance with method 5005, group A test table) |

\* PDA applies to subgroup 1.

\*\* When applicable to this standardized military drawing, the subgroups shall be defined.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-PRF-38534 and as specified herein.

4.3.1 Group A inspection. Group A inspection shall be in accordance with MIL-PRF-38534 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 5 and 6 shall be omitted.
- c. Subgroups 7 and 8 shall include verification of the truth table on figure 3.

4.3.2 Group B inspection. Group B inspection shall be in accordance with MIL-PRF-38534.

4.3.3 Group C inspection. Group C inspection shall be in accordance with MIL-PRF-38534 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. Steady-state life test, method 1005 of MIL-STD-883.
  - (1) Test condition B. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.
  - (2)  $T_A$  as specified in accordance with table I of method 1005 of MIL-STD-883.
  - (3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.3.4 Group D inspection. Group D inspection shall be in accordance with MIL-PRF-38534.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>27</b> |

4.3.5 Group E inspection. Group E inspection is required only for parts intended to be marked as radiation hardness assured (see 3.5 herein). See MIL-PRF-38534 to perform inspection.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38534.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

6.2 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-973 using DD Form 1692, Engineering Change Proposal.

6.4 Record of users. Military and industrial users shall inform Defense Supply Center Columbus when a system application requires configuration control and the applicable SMD. DSCC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DSCC-VA, telephone (614) 692-0526.

6.5 Comments. Comments on this drawing should be directed to DSCC-VA, Columbus, Ohio 43216-5000, or telephone (614) 692-0512.

6.6 One part - one part number system. The one part - one part number system described below has been developed to allow for transitions between identical generic devices covered by the three major microcircuit requirements documents (MIL-PRF-38534, MIL-PRF-38535, and 1.2.1 of MIL-STD-883) without the necessity for the generation of unique PIN's. The three military requirements documents represent different class levels, and previously when a device manufacturer upgraded military product from one class level to another, the benefits of the upgraded product were unavailable to the Original Equipment Manufacturer (OEM), that was contractually locked into the original unique PIN. By establishing a one part number system covering all three documents, the OEM can acquire to the highest class level available for a given generic device to meet system needs without modifying the original contract parts selection criteria.

| <u>Military documentation format</u>                    | <u>Example PIN under new system</u> | <u>Manufacturing source listing</u> | <u>Document listing</u> |
|---|-------------------------------------|-------------------------------------|-------------------------|
| New MIL-PRF-38534 Standard Microcircuit Drawings        | 5962-XXXXXZZ(H or K)YY              | QML-38534                           | MIL-BUL-103             |
| New MIL-PRF-38535 Standard Microcircuit Drawings        | 5962-XXXXXZZ(Q or V)YY              | QML-38535                           | MIL-BUL-103             |
| New 1.2.1 of MIL-STD-883 Standard Microcircuit Drawings | 5962-XXXXXZZ(M)YY                   | MIL-BUL-103                         | MIL-BUL-103             |

6.7 Sources of supply for device classes H and K. Sources of supply for device classes H and K are listed in QML-38534. The vendors listed in QML-38534 have submitted a certificate of compliance (see 3.7 herein) to DSCC-VA and have agreed to this drawing.

|   |                   |                             |                     |
|---|-------------------|-----------------------------|---------------------|
| <b>STANDARD<br/>MICROCIRCUIT DRAWING<br/>DEFENSE SUPPLY CENTER COLUMBUS<br/>COLUMBUS, OHIO 43216-5000</b> | <b>SIZE<br/>A</b> |                             | <b>5962-95613</b>   |
|   |                   | <b>REVISION LEVEL<br/>B</b> | <b>SHEET<br/>28</b> |

## STANDARD MICROCIRCUIT DRAWING SOURCE APPROVAL BULLETIN

DATE: 96-10-22

Approved sources of supply for SMD 5962-95613 are listed below for immediate acquisition only and shall be added to QML-38534 during the next revision. QML-38534 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DSCC-VA. This bulletin is superseded by the next dated revision of QML-38534.

| Standard Microcircuit Drawing PIN | Vendor CAGE number | Vendor similar PIN <u>1/</u> |
|-----------------------------------|--------------------|------------------------------|
| 5962-9561301HYC                   | 54230              | WMS512K8-120C                |
| 5962-9561301HYA                   | 54230              | WMS512K8-120C                |
| 5962-9561301HTC                   | 54230              | WMS512K8-120DE               |
| 5962-9561301HTA                   | 54230              | WMS512K8-120DE               |
| 5962-9561302HYC                   | 54230              | WMS512K8-100C                |
| 5962-9561302HYA                   | 54230              | WMS512K8-100C                |
| 5962-9561302HTC                   | 54230              | WMS512K8-100DE               |
| 5962-9561302HTA                   | 54230              | WMS512K8-100DE               |
| 5962-9561303HYC                   | 54230              | WMS512K8-85C                 |
| 5962-9561303HYA                   | 54230              | WMS512K8-85C                 |
| 5962-9561303HTC                   | 54230              | WMS512K8-85DE                |
| 5962-9561303HTA                   | 54230              | WMS512K8-85DE                |
| 5962-9561304HYC                   | 54230              | WMS512K8-70C                 |
| 5962-9561304HYA                   | 54230              | WMS512K8-70C                 |
| 5962-9561304HTC                   | 54230              | WMS512K8-70DE                |
| 5962-9561304HTA                   | 54230              | WMS512K8-70DE                |
| 5962-9561305HXC                   | 54230              | WMS512K8-55F                 |
| 5962-9561305HYC                   | 54230              | WMS512K8-55C                 |
| 5962-9561305HYA                   | 54230              | WMS512K8-55C                 |
| 5962-9561305HYC                   | 88379              | ACT-S512K8N-055P4Q           |
| 5962-9561305HYA                   | 88379              | ACT-S512K8N-055P4Q           |
| 5962-9561305HXC                   | 54230              | WMS512K8-55DJ                |
| 5962-9561305HZA                   | 54230              | WMS512K8-55DJ                |
| 5962-9561305HXC                   | 88379              | ACT-S512K8N-055F4Q           |
| 5962-9561305HZA                   | 88379              | ACT-S512K8N-055F4Q           |
| 5962-9561305HTC                   | 54230              | WMS512K8-55DE                |
| 5962-9561305HTA                   | 54230              | WMS512K8-55DE                |
| 5962-9561305HUC                   | 88379              | ACT-S512K8N-055F3Q           |
| 5962-9561305HUA                   | 88379              | ACT-S512K8N-055F3Q           |
| 5962-9561305HUC                   | 54230              | WMS512K8-55FT                |
| 5962-9561305HUA                   | 54230              | WMS512K8-55FT                |
| 5962-9561306HXC                   | 54230              | WMS512K8-45F                 |
| 5962-9561306HYC                   | 54230              | WMS512K8-45C                 |
| 5962-9561306HYA                   | 54230              | WMS512K8-45C                 |
| 5962-9561306HYC                   | 88379              | ACT-S512K8N-045P4Q           |
| 5962-9561306HYA                   | 88379              | ACT-S512K8N-045P4Q           |
| 5962-9561306HXC                   | 54230              | WMS512K8-45DJ                |
| 5962-9561306HZA                   | 54230              | WMS512K8-45DJ                |
| 5962-9561306HXC                   | 88379              | ACT-S512K8N-045F4Q           |
| 5962-9561306HZA                   | 88379              | ACT-S512K8N-045F4Q           |
| 5962-9561306HTC                   | 54230              | WMS512K8-45DE                |
| 5962-9561306HTA                   | 54230              | WMS512K8-45DE                |
| 5962-9561306HUC                   | 88379              | ACT-S512K8N-045F3Q           |
| 5962-9561306HUA                   | 88379              | ACT-S512K8N-045F3Q           |
| 5962-9561306HUC                   | 54230              | WMS512K8-45FT                |
| 5962-9561306HUA                   | 54230              | WMS512K8-45FT                |

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

## STANDARD MICROCIRCUIT DRAWING SOURCE APPROVAL BULLETIN - CONTINUED

DATE: 96-10-22

| Standard Microcircuit Drawing PIN | Vendor CAGE number | Vendor similar PIN <u>1/</u> |
|-----------------------------------|--------------------|------------------------------|
| 5962-9561307HXC                   | 54230              | WMS512K8-35F                 |
| 5962-9561307HYC                   | 54230              | WMS512K8-35C                 |
| 5962-9561307HYA                   | 54230              | WMS512K8-35C                 |
| 5962-9561307HYC                   | 88379              | ACT-S512K8N-035P4Q           |
| 5962-9561307HYA                   | 88379              | ACT-S512K8N-035P4Q           |
| 5962-9561307HZC                   | 54230              | WMS512K8-35DJ                |
| 5962-9561307HZA                   | 54230              | WMS512K8-35DJ                |
| 5962-9561307HZC                   | 88379              | ACT-S512K8N-035F4Q           |
| 5962-9561307HZA                   | 88379              | ACT-S512K8N-035F4Q           |
| 5962-9561307HTC                   | 54230              | WMS512K8-35DE                |
| 5962-9561307HTA                   | 54230              | WMS512K8-35DE                |
| 5962-9561307HUC                   | 88379              | ACT-S512K8N-035F3Q           |
| 5962-9561307HUA                   | 88379              | ACT-S512K8N-035F3Q           |
| 5962-9561307HUC                   | 54230              | WMS512K8-35FT                |
| 5962-9561307HUA                   | 54230              | WMS512K8-35FT                |
| 5962-9561308HXC                   | 54230              | WMS512K8-25F                 |
| 5962-9561308HYC                   | 54230              | WMS512K8-25C                 |
| 5962-9561308HYA                   | 54230              | WMS512K8-25C                 |
| 5962-9561308HYC                   | 88379              | ACT-S512K8N-025P4Q           |
| 5962-9561308HYA                   | 88379              | ACT-S512K8N-025P4Q           |
| 5962-9561308HZC                   | 54230              | WMS512K8-25DJ                |
| 5962-9561308HZA                   | 54230              | WMS512K8-25DJ                |
| 5962-9561308HZC                   | 88379              | ACT-S512K8N-025F4Q           |
| 5962-9561308HZA                   | 88379              | ACT-S512K8N-025F4Q           |
| 5962-9561308HTC                   | 54230              | WMS512K8-25DE                |
| 5962-9561308HTA                   | 54230              | WMS512K8-25DE                |
| 5962-9561308HUC                   | 88379              | ACT-S512K8N-025F3Q           |
| 5962-9561308HUA                   | 88379              | ACT-S512K8N-025F3Q           |
| 5962-9561308HUC                   | 54230              | WMS512K8-25FT                |
| 5962-9561308HUA                   | 54230              | WMS512K8-25FT                |
| 5962-9561309HXC                   | 54230              | WMS512K8-20F                 |
| 5962-9561309HYC                   | 54230              | WMS512K8-20C                 |
| 5962-9561309HYA                   | 54230              | WMS512K8-20C                 |
| 5962-9561309HYC                   | 88379              | ACT-S512K8N-020P4Q           |
| 5962-9561309HYA                   | 88379              | ACT-S512K8N-020P4Q           |
| 5962-9561309HZC                   | 54230              | WMS512K8-20DJ                |
| 5962-9561309HZA                   | 54230              | WMS512K8-20DJ                |
| 5962-9561309HZC                   | 88379              | ACT-S512K8N-020F4Q           |
| 5962-9561309HZA                   | 88379              | ACT-S512K8N-020F4Q           |
| 5962-9561309HTC                   | 54230              | WMS512K8-20DE                |
| 5962-9561309HTA                   | 54230              | WMS512K8-20DE                |
| 5962-9561309HUC                   | 88379              | ACT-S512K8N-020F3Q           |
| 5962-9561309HUA                   | 88379              | ACT-S512K8N-020F3Q           |
| 5962-9561309HUC                   | 54230              | WMS512K8-20FT                |
| 5962-9561309HUA                   | 54230              | WMS512K8-20FT                |

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

## STANDARD MICROCIRCUIT DRAWING SOURCE APPROVAL BULLETIN - CONTINUED

DATE: 96-10-22

| Standard Microcircuit Drawing PIN | Vendor CAGE number | Vendor similar PIN <u>1/</u> |
|-----------------------------------|--------------------|------------------------------|
| 5962-9561310HXC                   | 54230              | WMS512K8-17F                 |
| 5962-9561310HYC                   | 54230              | WMS512K8-17C                 |
| 5962-9561310HYA                   | 54230              | WMS512K8-17C                 |
| 5962-9561310HYC                   | 88379              | ACT-S512K8N-017P4Q           |
| 5962-9561310HYA                   | 88379              | ACT-S512K8N-017P4Q           |
| 5962-9561310HXC                   | 54230              | WMS512K8-17DJ                |
| 5962-9561310HZA                   | 54230              | WMS512K8-17DJ                |
| 5962-9561310HXC                   | 88379              | ACT-S512K8N-017F4Q           |
| 5962-9561310HZA                   | 88379              | ACT-S512K8N-017F4Q           |
| 5962-9561310HTC                   | 54230              | WMS512K8-17DE                |
| 5962-9561310HTA                   | 54230              | WMS512K8-17DE                |
| 5962-9561310HUC                   | 88379              | ACT-S512K8N-017F3Q           |
| 5962-9561310HUA                   | 88379              | ACT-S512K8N-017F3Q           |
| 5962-9561310HUC                   | 54230              | WMS512K8-17FT                |
| 5962-9561310HUA                   | 54230              | WMS512K8-17FT                |
| 5962-9561311HTC                   | 54230              | WMS512K8M-45DE               |
| 5962-9561311HTA                   | 54230              | WMS512K8M-45DE               |
| 5962-9561311HYC                   | 54230              | WMS512K8M-45C                |
| 5962-9561311HYA                   | 54230              | WMS512K8M-45C                |
| 5962-9561312HTC                   | 54230              | WMS512KM-35DE                |
| 5962-9561312HTA                   | 54230              | WMS512KM-35DE                |
| 5962-9561312HYC                   | 54230              | WMS512KM-35C                 |
| 5962-9561312HYA                   | 54230              | WMS512KM-35C                 |
| 5962-9561313HTC                   | 54230              | WMS512K8M-25DE               |
| 5962-9561313HTA                   | 54230              | WMS512K8M-25DE               |
| 5962-9561313HYC                   | 54230              | WMS512K8M-25C                |
| 5962-9561313HYA                   | 54230              | WMS512K8M-25C                |

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

Vendor CAGE number

Vendor name and address

54230

White Microelectronics  
4246 East Wood Street  
Phoenix, AZ 85040-1991

88379

Aeroflex Circuit Technology Corporation  
35 South Service Road  
Plainview, NY 11803

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